PATENT SPECIFICATION

DRAWINGS ATTACHED

862,036

Date of Application and filing Complete Specification Jan. 20, 1959.

No. 2030/59.

Application made in Germany on Feb. 1, 1958.

Complete Specification Published March 1, 1961.

GT. BRIT. DIV.

Index at acceptance:—Class 138(1), S1.

International Classification:—A47l.

COMPLETE SPECIFICATION

Improvements in Windscreen Wipers

We, ROBERT BOSCH G.M.B.H., a German Company, of 4, Breitscheidstrasse, Stuttgart-W, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to windscreen wipers for curved windscreens which are more curved towards their sides than in the section lying therebetween.

It is known to construct windscreen wipers with a rubber blade and at least one strip carrying the blade which strip is flexible in a plane perpendicular to the surface of the windscreen, as well as at least one bow-shaped holding bracket engaging the strip, which bracket or brackets is or are coupled to the lever arm which reciprocates the blade.

In windscreen wipers of this type, the blade operating for a fixed sector of movement, must be more greatly curved at one end than at the other in order to adapt itself to the curvature of the screen.

Previously known suspension means for the wiper blade have the disadvantage that the blade may not wipe satisfactorily at its more greatly curved end (generally lying away from the pivot axis of the lever arm) because there it is pressed too lightly against the windscreen. An attempt has been made to remove this disadvantage by increasing the bearing pressure exerted on the blade by the lever arm. In this case, however, there is the drawback that the blade is pressed too heavily against the windscreen at its less curved end, so that, after being in operation for a short time, it deforms or wears and then no longer fulfils its purpose.

According to one feature of the present invention, a wiper for curved windscreens which have greater curvature towards their sides than in the section lying between comprises a wiper blade of rubber or similar material, at least one flexible holding strip which is bendable in a plane perpendicular to the surface of the windscreen when the wiper is in operation and which carries the wiper blade, and at least one holding bracket engaging with the strip and articulable to a reciprocable power driven lever arm, said holding strip having parts of a progressively smaller cross section, or parts of smaller cross section progressively closer together, towards the end intended to operate towards the more curved portion of the screen to make the holding strip more flexible towards this end.

No alterations need be necessary in the usual commercial construction of the carrier for the wiper blade, and a blade equipped with such a holding strip can even be added later to existing windscreen wipers.

Thus according to another feature of the invention a wiper blade for a windscreen wiper is carried by a flexible holding strip which is bendable in a plane perpendicular to the surface of the windscreen when the wiper is in operation and has parts of progressively smaller cross section, or parts of smaller cross section progressively closer together, towards the end intended to operate towards a more curved portion of the windscreen to make the holding strip more flexible towards this end.

The invention is further described by way of example with reference to the accompanying drawings in which:—

Fig. 1 illustrates the arrangement of a windscreen wiper in front of a windscreen (shown in cross section) of a motor vehicle,

Fig. 2 is a side view, to a larger scale, f the wiper in that position in which the outward end of the blade is the most curved,

Fig. 3 is an enlarged cross section along the line III—III of Fig. 2, and

Figs. 4 to 6 are plan views of three different embodiments f holding strip for windscreen wipers according to the invention.

Referring to Fig. 1, a windscreen wiper driving shaft 2 is mounted on a motor vehicle

[Price 3s. 6d.]

body 1 and can be turned in reciprocating manner by a driving means (not shown). On the free end of this shaft 2 is fixed a lever arm 3, to the outward end of which a bow shaped bracket 4 for the transmission of pressure is flexibly and removably attached. The ends of the bracket 4 are each flexibly connected to a bow-shaped holding bracket 5 which has claw-like end sections 6 embracing a short section of holding strips 7, 8, which are inserted in longitudinal grooves in the headpiece of a wiper blade 9 in the manner shown in Fig. 3. The lever arm 3, by means of the brackets 4 and 5 and the holding strips 7, 8, presses the wiper blade 9 flexibly against the windscreen 10, so that the holding strips 7, 8 and the wiper blade 9 adapt themselves to the particular curvature of the screen.

In the embodiment of Fig. 4, the holding strips 7, 8 are provided with stepped cut-away sections 11 on their outside edges, so that the strips become progressively narrower and at this end are more easily bendable than at the other end (not shown on the drawing). In the vicinity of the extreme end of the more easily bendable section, the strips are provided with lugs 12, with which the claw-like bent-over parts 6 of the bracket 5 engage.

In the embodiment of Fig. 5, the strips 7, 8 are provided with holes 13 which are arranged so that they are progressively closer to one another towards the end of the strip, thereby giving increased flexibility to the strip towards its outer end.

In the embodiment of Fig. 6, the strips 7, 8 are provided with cut-out sections 14 on their inside facing edges which, as can be seen in Fig. 3, are inserted in longitudinal slots in the wiper blade. The cut-outs 14 are arranged so that they become progressively deeper and also closer to one another, towards the free end of the strips 7, 8, so that here also, as in the examples of Figs. 4 and 5, the strips 7, 8 are more easily bendable towards this end.

The wiper blade 9, provided with one of the carrying strips shown in Figures 4 to 6, is fixed on the wiper so that the more easily bendable end of the strip lies where the wiper blade 9 when in action must curve the most.

The various constructional features of one of the holding strips shown may also be embodied in the other holding strips in an equivalent application. Thus, for example, in the form shown in Fig. 4 the gradations 11 could be of different depth and be at a different distance from one another. Further, in the form shown in Fig. 5, the holes 13 could be made progressively larger. In another embodiment the width of the strip decreases uniformly towards its more flexible end.

WHAT WE CLAIM IS:—

1. A wiper for curved windscreens which have greater curvature towards their sides than in the section lying between, comprising a wiper blade of rubber r similar material, at least one flexible holding strip which is bendable in a plane perpendicular to the surface of the windscreen when the wiper is in operation and which carries the wiper blade, and at least one holding bracket engaging with the strip and articulable to a reciprocable power driven lever arm, said holding strip having parts of a progressively smaller cross section, or parts of smaller cross section progressively closer together, towards the end intended to operate towards the more curved portion of the screen to make the holding strip more flexible towards this end.

2. A windscreen wiper as claimed in Claim 1, in which the holding strip is narrower towards its more easily bendable end.

3. A windscreen wiper as claimed in Claim 2, in which the width of the strip decreases uniformly.

4. A windscreen wiper as claimed in Claim 2, in which the width of the strip decreases by steps.

5. A windscreen wiper as claimed in Claim 4, in which the decreases in cross-section are provided in uniform steps on the outside longitudinal edges of the strip.

6. A windscreen wiper as claimed in Claim 1 in which the more flexible section of the holding strip has holes or recesses each f which decreases the cross section of the strip progressively more towards the relevant end.

7. A windscreen wiper as claimed in Claim 6, in which the holes or recesses are progressively larger towards the more flexible end of the strip.

8. A windscreen wiper as claimed in Claim 6 or 7, in which the holes or recesses are arranged so that they are progressively closer to one another towards the more flexible end of the strip.

9. A windscreen wiper as claimed in any of Claims 6 to 8 in which said holding strip has longitudinal edges in engagement with a longitudinal slot in the wiper blade, and in which said recesses are provided in these longitudinal edges.

10. A wiper blade for a windscreen wiper according to any preceding claim in which is carried by a flexible holding strip which is bendable in a plane perpendicular to the surface of the windscreen when the wiper is in operation and which has parts of a progressively smaller cross section, or parts of smaller cross section progressively closer together, towards the end intended to operate towards a more curved portion f the windscreen to make the holding strip more flexible towards this end.

11. A windscreen wiper constructed and arranged substantially as herein described with reference to and as illustrated in Figs.

1 and 2 of the accompanying drawings and having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 4 of the accompanying drawings.

12. A windscreen wiper constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 1 and 2 of the accompanying drawings and having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 5 of the accompanying drawings.

13. A windscreen wiper constructed and arranged substantially as herein described with reference to and as illustrated in Figs. 1 and 2 of the accompanying drawings and having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 6 of the accompanying drawings.

14. A windscreen wiper blade having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 4 of the accompanying drawings.

15. A windscreen wiper blade having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 5 of the accompanying drawings.

16. A windscreen wiper blade having a holding strip constructed substantially as herein described with reference to and as illustrated in Fig. 6 of the accompanying drawings.

W. P. THOMPSON & CO.,
12, Church Street,
Liverpool, 1,
Chartered Patent Agents.

Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1961
Published at the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained

15-250.451 AU 3405 46103

GB 000862036 A
MAR 1961

March 1, 1961

862,036 COMPLETE SPECIFICATION

1 SHEET *This drawing is a reproduction of the Original on a reduced scale.*

Fig.1

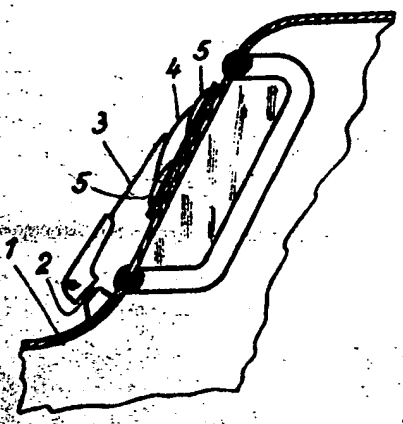


Fig.2

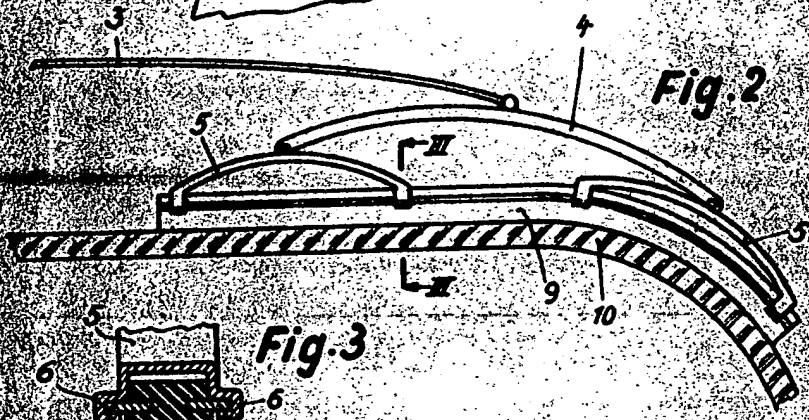


Fig.3

Fig.4

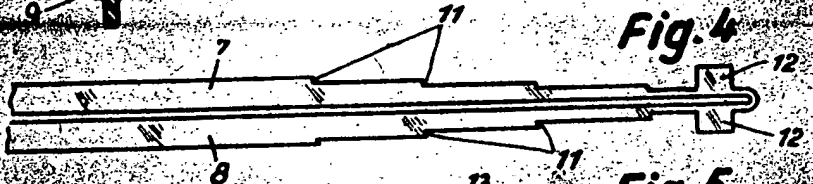


Fig.5

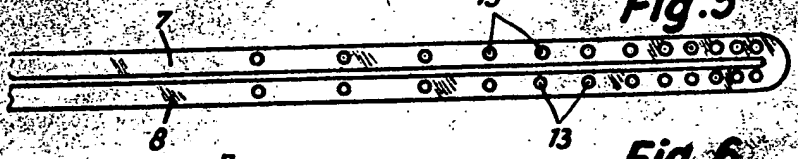
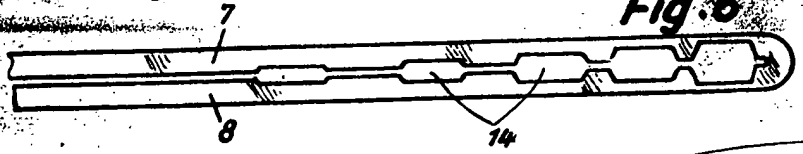


Fig.6



15/250.451